

What is claimed is:

1. An apparatus for determining a response to a stimulus, the apparatus comprising:
a stimulus input that receives a stimulus signal representing the stimulus;
a response input that receives at least one response signal, each response signal being
5 indicative of a response to the stimulus; and
a correlator coupled with the stimulus input and the response input, the correlator
correlating the received stimulus with each received response signal as a function of time to
produce an associative mapping.
- 10 2. The apparatus as defined by claim 1 wherein the associative mapping is stored in an
associative cache.
3. The apparatus as defined by claim 1 wherein the stimulus signal comprises a plurality
of frames, the associative mapping correlating each frame with a portion of each response
15 signal.
4. The apparatus as defined by claim 1 wherein at least one of the one or more input
devices is a sensor that measures an environmental condition.
- 20 5. The apparatus as defined by claim 1 wherein the stimulus comprises a time-delayed
presentation.
6. The apparatus as defined by claim 1 wherein the associative mapping associates at
least one of video, audio and response variables with time.
- 25 7. The apparatus as defined by claim 1 further comprising:
an output that directs an output signal to a display device, the output signal including
data for displaying the associative mapping substantially instantaneously after the creation
thereof.

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8. The apparatus as defined by claim 1 wherein the response input includes at least a first group of responses having first variables, and a second group of responses having second variables, at least one variable being different between the first group and the second group, the first group being disposed at a first angle to the stimulus that differs from a second angle of the second group to the stimulus.
9. The apparatus as defined by claim 1 further comprising:
at least one monitoring device adapted to receive the stimulus and generate the stimulus signal, the at least one monitoring device detecting light outside the visible spectrum.
10. An apparatus as defined by claim 1 wherein the correlator includes a stored stimulus signal to compare against the stimulus signal and generate a difference signal representative of the differences between the stimulus signal and the stored signal.
11. The apparatus as defined by claim 10 wherein the processor alarms if the difference signal exceeds a threshold value.
12. The apparatus as defined by claim 1 further comprising a video recorder being adapted to record an image generated by the display substantially instantaneously after the creation thereof.
13. The apparatus as defined by claim 1 further comprising:
an analyzer in electrical communication with the correlator, the analyzer adapted to perform statistical analysis on the input signals from the response input to find selected segments of the stimulus signal.
14. The apparatus as defined by claim 13 wherein the analyzer determines a point of statistical interest as measured against predetermined criteria.

15. The apparatus as defined by claim 13 wherein the analyzer interpolates information based upon the input signals from each of the one or more input devices.
16. The apparatus as defined by claim 13 wherein the analyzer extrapolates information
5 based upon the input signals from the response input.
17. The apparatus as defined by claim 1 further comprising:
a computer in electrical communication with the correlator such that the correlator transmits the stimulus signal and the input signals in raw form to the computer.
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18. The apparatus as defined by claim 17 wherein the correlator performs digital signal processing on the stimulus signal and the input signals forwarded to the computer.
19. The apparatus as defined by claim 18 wherein the computer comprises a graphical
15 user interface through which a user selects which statistical analysis is performed.
20. The apparatus as defined by claim 18 wherein the computer comprises a graphical user interface for displaying the associative mapping in real time.
- 20 21. The apparatus as defined by claim 1 wherein the associative mapping is addressable by content.
22. The apparatus as defined by claim 1 wherein the response input is coupled to a network.
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23. The apparatus as defined by claim 22 wherein the stimulus input is coupled to the network.
24. A computer program product for use on a computer system for determining the
30 reason that an audience generates a response to a stimulus, the computer program product

comprising a computer usable medium having computer readable program code thereon, the computer readable program code including:

- program code for recording the response from the audience to the stimulus;
- program code for performing a statistical analysis of the response to determine at
- 5 least one notable reaction;
- program code for replaying the at least one notable reaction to the audience;
- program code for querying the audience as to why the at least one notable reaction was received; and
- program code for recording a second response to why the at least one notable reaction
- 10 was received.

25. A method of determining an audience's response to a stimulus, the method comprising:

- receiving, in real time, at least one response to the stimulus;
- 15 correlating, by time, the at least one response and the stimulus to generate an associative mapping of the at least one response; and
- storing the associative mapping such that the associative mapping is accessible by content of the at least one response.

20 26. The method as defined by claim 25 further comprising:

- receiving search criteria representative of content of the at least one response; and
- generating a response signal having data identifying the at least one response that meet the search criteria.

25 27. The method as defined by claim 26 further comprising:

- forwarding the response signal to a display device to display the at least one response that meet the search criteria.

28. The method as defined by claim 25 wherein the act of correlating comprises:

- 30 generating an analyzed variable having the at least one response and the stimulus at a given time.

29. The method as defined by claim 25 wherein the associative mapping correlates the stimulus over time with the at least one response.

5 30. A computer program product for use on a computer system for determining an audience's response to a stimulus, the computer program product comprising a computer usable medium having computer readable program code thereon, the computer readable program code including:

program code for receiving, in real time, at least one response to the stimulus;
 10 program code for correlating, by time, the at least one response and the stimulus to generate an associative mapping of the at least one response; and
 program code for storing the associative mapping such that the associative mapping is accessible by content of the at least one response.

15 31. The computer program product as defined by claim 30 further comprising:
 receiving search criteria representative of content of the at least one response; and
 generating a response signal having data identifying the at least one response that meet the search criteria.

20 32. The computer program product as defined by claim 31 further comprising:
 forwarding the response signal to a display device to display the at least one response that meet the search criteria.

25 33. The computer program product as defined by claim 30 wherein the program code for correlating comprises:
 program code for generating an analyzed variable having the at least one response and the stimulus at a given time.

30 34. The computer program product as defined by claim 30 wherein the associative mapping correlates the stimulus over time with the at least one response.

35. An apparatus for determining an audience's response to a stimulus, the apparatus comprising:

an input for receiving, in real time, at least one response to the stimulus;

a correlator for correlating, by time, the at least one response and the stimulus to

5 generate an associative mapping of the at least one response; and

a storage module operatively coupled with the correlator, the storage module storing the associative mapping such that the associative mapping is accessible by content of the at least one response.

10 36. The apparatus as defined by claim 35 further comprising:

a search input that receives search criteria representative of content of the at least one response; and

means for generating a response signal having data identifying the at least one response that meet the search criteria.

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37. An apparatus for processing a response to a stimulus for display in real time, the apparatus comprising:

a response input that receives at least one response signal, each response signal corresponding in time to the stimulus;

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a processor operatively coupled with the response input, the processor associating the at least one response signal with at least one portion of the stimulus over time to produce an associative mapping representative of the at least one response to the at least one portion of the stimulus; and

an output operatively coupled with the processor, the output forwarding a display
25 signal having data representing the associative mapping.

38. The apparatus as defined by claim 37 further comprising:

a display device for receiving the display signal and displaying the at least one response and the portion of the stimulus as represented in the associative mapping.

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39. The apparatus as defined by claim 37 further comprising a comparator for comparing the stimulus to an archive of a prior response to a prior stimulus stored on a storage device.

40. A method for processing a response to a stimulus for display in real time, the method comprising:

receiving at least one response signal, each response signal corresponding in time to the stimulus;

associating the at least one response signal with at least one portion of the stimulus over time to produce an associative mapping representative of the at least one response to the at least one portion of the stimulus; and

generating a display signal having data representing the associative mapping.

41. The method as defined by claim 40 further comprising:

displaying the at least one response and the portion of the stimulus as represented in the associative mapping.

42. The method as defined by claim 40 further comprising comparing the stimulus to an archive of a prior response to a prior stimulus stored on a storage device.

43. A computer program product for use on a computer system for processing a response to a stimulus for display in real time, the computer program product comprising a computer usable medium having computer readable program code thereon, the computer readable program code including:

program code for receiving at least one response signal, each response signal corresponding in time to the stimulus;

program code for associating the at least one response signal with at least one portion of the stimulus over time to produce an associative mapping representative of the at least one response to the at least one portion of the stimulus; and

program code for generating a display signal having data representing the associative mapping.

44. The computer program product as defined by claim 43 further comprising:
program code for displaying the at least one response and the portion of the stimulus
as represented in the associative mapping.
- 5 45. The computer program product as defined by claim 43 further comprising program
code for comparing the stimulus to an archive of a prior response to a prior stimulus stored
on a storage device.
- 10 46. A computer program product for use on a computer system for allowing a user to
interactively search an audience's response to one or more stimuli, the computer program
product comprising a computer usable medium having computer readable program code
thereon, the computer readable program code including:
program code for providing a stimulus to the audience;
program code for recording one or more responses to the stimulus in real-time;
15 program code for correlating by time the one or more responses to the one or more
stimuli to generate an associative mapping of the one or more responses and the stimuli;
program code for storing the associative mapping such that the associative mapping
is accessible by content of the one or more responses and the one or more stimuli;
program code for prompting the user for search criteria representative of content of
20 the one or more responses; and
program code for displaying the user the one or more responses and the one or more
stimuli meeting the search criteria.
- 25 47. The computer program product as defined by claim 46 wherein the program code for
correlating the response to the one or more stimuli comprises program code for generating an
analyzed variable, the analyzed variable including the one or more responses and the one or
more stimuli at a given time.
- 30 48. The computer program product as defined by claim 46 wherein the search criteria
include a time duration of the one or more stimuli surrounding the response.